

In the Claims:

Listing of all claims:

1-5. Cancelled.

1 6. (Original) An apparatus for feeding wire
2 at a controllable wire feed speed to a weld comprising:
3 a wire feed motor, having a wire feed speed;
4 a controller means for controlling the motor
5 speed, wherein the controller means is coupled to the motor;
6 and
7 an input means for allowing a user to select a
8 wire feed speed;
9 wherein the controller means includes an input
10 circuit coupled to the input means, and wherein the input
11 circuit includes non-linear means for creating a non-linear
12 relationship between a setting of the input means and the
13 wire feed speed.

1 7. (Original) The apparatus of claim 6 wherein
2 the input means includes a potentiometer mounted on a front
3 panel.

1 8. (Original) The apparatus of claim 7 where the
2 input circuit includes a gain stage means for providing at least
3 two gains.

1 9. (Original) The apparatus of claim 7 wherein
2 the non-linear means includes a gain stage means for providing a
3 varying gain.

1 10. (Original) A method of controlling wire
2 feeder comprising the steps of:

3 providing the wire at a controlled speed;
4 providing a user input; and
5 creating a non-linear relationship between the
6 user input and the wire feed speed.

1 11. (Original) The method of claim 10 wherein the
2 step of providing a user input includes providing a potentiometer
3 mounted on a front panel.

1 12. (Original) The method of claim 11 where the
2 step of creating includes the step of providing at least two
3 gains in a gain stage connected to the user input.

1 13. (Original) An apparatus for controlling
2 the rate at which wire is fed to a weld, comprising:
3 a wire feed motor output;
4 a selectable wire feed speed input; and
5 an input circuit coupled to the selectable wire
6 feed speed input, and wherein the input circuit includes a
7 non-linear stage such that the relationship between the
8 selectable wire feed speed input and the wire feed output is
9 not linear.

1 14. (Original) The apparatus of claim 13 wherein
2 the selectable wire feed speed input includes a potentiometer
3 mounted on a front panel.

1 15. (Original) The apparatus of claim 14 where
2 the input circuit includes a plurality of gain stages each having
3 gain over one of a plurality of input ranges.

1 16. (Original) The apparatus of claim 14 wherein
2 the non-linear stage includes a gain stage having a varying gain.

1 17. (Original) The apparatus of claim 13 wherein
2 the controller directly controls wire feed speed.

1 18. (Original) An apparatus for controlling
2 the rate at which wire is fed to a weld comprising:
3 a wire feed motor output, corresponding to a wired
4 feed speed;
5 controller means for controlling the motor speed,
6 wherein the controller means is coupled to the motor output;
7 and
8 an input means for allowing a user to select a
9 wire feed speed;
10 wherein the controller means includes an input
11 circuit coupled to the input means, and wherein the input
12 circuit includes non-linear means for creating a non-linear
13 relationship between a setting of the input means and the
14 motor output.

1 19. (Original) The apparatus of claim 18 wherein
2 the input means includes a potentiometer mounted on a front
3 panel.

1 20. (Original) The apparatus of claim 19 where
2 the input circuit includes a gain stage means for providing at
3 least two gains.

1 21. (Original) The apparatus of claim 19 wherein
2 the non-linear means includes a gain stage means for providing a
3 varying gain.

1 22. (Original) An apparatus for arc welding
2 comprising:
3 a welding power supply connected to provide
4 welding power to the arc;

5 a wire feed motor, disposed to provide wire to the
6 arc and having a wire feed speed;
7 a controller, coupled to the wire feed motor; and
8 a selectable wire feed speed input;
9 wherein the controller includes an input circuit
10 coupled to the selectable wire feed speed input, and wherein
11 the input circuit includes a non-linear stage such that the
12 relationship between the selectable wire feed speed input
13 and the wire feed speed is not linear.

1 23. (Original) The apparatus of claim 22 wherein
2 the selectable wire feed speed input includes a potentiometer
3 mounted on a front panel.

1 24. (Original) The apparatus of claim 23 where
2 the input circuit includes a plurality of gain stages each having
3 gain over one of a plurality of input ranges.

1 25. (Original) The apparatus of claim 23 wherein
2 the non-linear stage includes a gain stage having a varying gain.

1 26. (Original) The apparatus of claim 22 wherein
2 the controller directly controls wire feed speed.